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Witness: John Cochrane
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Sponsoring Party: The Empire District Electric Company
Case No.: ER-2019-0374
Testimony Prepared: March 2020

Before the Public Service Commission of the State of Missouri

Surrebuttal Testimony

of

John Cochrane

on Behalf of

The Empire District Electric Company a Liberty Utilities Company

March 2020

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is John Cochrane. I am a Senior Managing Director and head of the Power & Utilities practice at FTI Consulting, Inc. ("FTI"). My business address is 200 State St, 9th Floor, Boston, Massachusetts.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING TESTIMONY?

A. I am submitting testimony on behalf of The Empire District Electric Company ("Liberty-Empire" or the "Company"), a subsidiary of Liberty Utilities Co. ("LUCo").

Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL EXPERIENCE.

A. Prior to joining FTI, I worked for National Grid plc ("National Grid") and its predecessor US companies for over thirty years. National Grid is a large, global investor-owned utility with total assets of over $80 billion, as of 2018/19. Its US utility operations cover New York, Massachusetts, Rhode Island and New Hampshire. At National Grid, I held senior executive positions, including Executive Vice President of Global Mergers & Acquisitions and Business Development in addition to Executive Vice President, Chief Financial Officer and Treasurer for National Grid's entire US business. I also held numerous other treasury and finance positions for all of National Grid's US subsidiaries and was a director on the boards of numerous National Grid US and international subsidiaries. My finance expertise spans many years of hands-on experience in all areas of long- and short-term financing and capital structure decision making. On behalf of the US National Grid regulated utility subsidiaries, I have testified numerous times in New York, Massachusetts, Rhode Island, New Hampshire and at the Federal Regulatory Energy Commission. I hold a Bachelor's degree in Biology from Harvard University and an MBA from Northeastern University. A copy of my resume is provided as Surrebuttal Attachment JC-1.

Q. PLEASE DESCRIBE FTI'S POWER & UTILITIES PRACTICE.

A. FTI is a global consulting firm dedicated to helping organizations manage change, mitigate risk, and resolve disputes. Our Power & Utilities practice brings these services to firms in regulated and competitive energy industries. The services we provide our utility clients include expert testimony, regulatory advice, support for strategic decision-making and advice regarding investments and capital allocation.

II. <u>PURPOSE</u>

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY IN THIS MATTER?

A. The purpose of my surrebuttal testimony is to respond to a portion of the rebuttal testimony of Missouri Public Service Commission ("Commission") Staff witness Kim Bolin with regard to Liberty-Empire's affiliate transactions with its parent company, LUCo. Specifically, I discuss the refinancing of Liberty-Empire's $90 million first mortgage bonds that matured on June 1, 2018.

Q. WHAT SPECIFIC STATEMENTS IN MS. BOLIN'S REBUTTAL TESTIMONY WILL YOU ADDRESS?

A. I will address the questions and answers starting on page 11, line 13, and continuing through page 13, line 2, of Ms. Bolin's rebuttal testimony.

Q. PLEASE SUMMARIZE THE REFERENCED PORTION OF MS. BOLIN'S REBUTTAL TESTIMONY.

A. Ms. Bolin references Office of the Public Counsel ("OPC") witness Bob Schallenberg's direct testimony and his claim that Liberty-Empire violated the Commission's Affiliate Transactions Rule by refinancing the Company's maturing $90 million first mortgage bonds with an affiliate (LUCo) and states that Staff's position is that the refinancing transaction "is very likely a violation of the affiliate transactions rule." Ms. Bolin notes that Liberty-Empire signed a promissory note with LUCo that had a 4.53% interest rate and claims (1) that LUCo obtained the funds to loan Empire the $90 million by accessing LUCo's credit facility and (2) that LUCo obtained the money at a significantly lower interest rate than 4.53%.

Q. OPC WITNESS MR. SCHALLENBERG RAISED THIS ISSUE IN DIRECT TESTIMONY. WAS THE ISSUE ADDRESSED IN LIBERTY-EMPIRE'S REBUTTAL TESTIMONY?

A. Yes. Company witness Mark Timpe addressed this issue at length in his rebuttal testimony. Mr. Timpe explained that OPC witness Mr. Schallenberg ignored the purpose and essence of the $90 million financing transaction; the goal of this transaction was to provide Liberty-Empire with replacement long-term financing. Mr. Timpe explained that Mr. Schallenberg's testimony ignored the basic financing principle of matching longlived assets with long-term debt. Mr. Timpe also explained that utilizing short-term commercial paper financing, as suggested by Mr. Schallenberg, to replace Liberty-Empire's $90 million maturing long-term debt would expose Liberty-Empire and its customers to fluctuating interest rates and would not protect customers from increased expense should interest rates return to historical norms.

Q. IF OPC'S ALLEGATIONS WERE ALREADY REBUTTED, WHY IS THE COMPANY ADDRESSING THE ISSUE IN SURREBUTTAL TESTIMONY?

A. As noted above, my surrebuttal testimony responds to Staff witness Kim Bolin's rebuttal testimony regarding the refinancing of Liberty-Empire's maturing $90 million long-term debt. My surrebuttal testimony also addresses the following statements made by OPC witness David Murray at page 9, lines 13-21, of his rebuttal testimony:

> Both Staff and Empire include a $90 million affiliate note in their capital structure recommendations. APUC assigned an interest rate of 4.53% to this debt based on its own internal methodology. APUC funded this loan to Empire through an advance on LUCo's credit facility. Under the Commission's applicable affiliate transactions rule, Empire should not be charged more than the fully distributed cost or fair market value, whichever is less. LUCo funded this loan through short-term debt, which had an average cost of 2.43% through the 12-months ended September 30, 2019. Applying this interest rate rather than the 4.53% rate APUC assigned results in an embedded cost of debt of 4.52%, compared to the 4.76% recommended by Staff.

Q. DOES STAFF WITNESS MS. BOLIN EXPLAIN WHY STAFF BELIEVES THE REFINANCING TRANSACTION VIOLATED THE COMMISSION'S AFFILIATE TRANSACTIONS RULE?

A. Yes. Ms. Bolin claims Liberty-Empire violated the rule "because LUCo is charging its affiliate, Empire, a higher interest rate for money it obtained at a lower rate." Bolin Rebuttal, p. 13, lines 2-3.

Q. DOES MS. BOLIN POINT TO A SPECIFIC SUBPART OF THE COMMISSION'S AFFILIATE TRANSACTIONS RULE?

A. Yes. Ms. Bolin points to Rule 20 CSR 4240-20.015(2)(A), which states that a "regulated electrical corporation shall not provide a financial advantage to an affiliated entity. For the purpose of this rule, a regulated electrical corporation shall be deemed to provide a financial advantage to an affiliated entity if – 1. It compensates an affiliated entity for goods or services above the lesser of – A. The fair market price; or B. The fully distributed cost to the regulated electrical corporation to provide the goods or service for itself."

Q. DOES STAFF RAISE A QUESTION REGARDING THE PRUDENCE OF THE REFINANCING TRANSACTION?

A. Yes. At page 12, lines 16-18, of her rebuttal testimony, Ms. Bolin states that "even if cheaper financing could not have been obtained directly by Empire, the fact that LUCo is charging Empire a higher interest rate then what LUCo is currently paying is at least a possible prudency issue."

Q. DOES STAFF STATE AGREEMENT WITH OPC WITNESS SCHALLENBERG'S CALCULATION OF THE AMOUNT LIBERTY-EMPIRE IS ALLEGEDLY OVERPAYING LUCO ANNUALLY FOR THE FINANCING?

A. No. Ms. Bolin states, "Staff is still reviewing the interest rates that were available to LUCo through its credit facility since the date the promissory note was signed (June 1, 2018) through January 31, 2020, the true-up date in this proceeding. The interest rates for the credit facility fluctuate over time, so an average of the rates since the note was issued may be an appropriate rate to use to calculate an adjustment for Empire's over-payment for the money obtained by LUCo and loaned to Empire." Bolin Rebuttal, p. 12, ln. 23 – p. 13, ln. 2.

III. AFFILIATE TRANSACTIONS RULE

Q. DID THE REFINANCING TRANSACTION VIOLATE COMMISSION RULE 20 CSR 4240-20.015(2)(A), AS ALLEGED BY STAFF WITNESS MS. BOLIN?

A. No.

Q. PLEASE EXPLAIN.

A. I have reviewed Standards Section (2)(A) of the Affiliate Transactions Rule, and I do not read those particular provisions to say that they apply to a specific point in time for refinancing maturing long-term bonds, which is what Ms. Bolin suggests in her testimony. I also read the Affiliate Transactions Rule to apply specifically to the goods or services required by the Company, and supplied by an affiliate. The good or service required by the Company in this situation was long term debt. On March 24, 2017, Liberty Utilities Finance GP1 issued, on behalf of LUCo, a very large, oversubscribed, competitively bid private placement of $750 million of long-term notes, which, as Mr. Timpe addressed in his rebuttal testimony, formed the basis for the fair market price terms and the ultimate Fully Distributed Cost ("FDC") of the 4.53% promissory note. LUCo's overall financing strategy factors in all of its approximately 40 subsidiaries. These direct and indirect subsidiaries provide significant size, scale and revenue diversity to LUCo which allows it to achieve more advantageous borrowing terms from lenders, which it then passes on to its subsidiaries. LUCo will not issue new long-term, competitively-bid notes to the market each time, on the exact day, that one of its subsidiaries has a maturing long-term debt issue. That would reduce advantages related to size, scale and timing that LUCo and the Company benefit from. Instead, LUCo and the Company's optimal financing strategy is for LUCo to accumulate a sizable enough issuance amount based on the needs of its many subsidiaries, which means, at times, short-term debt or other cash flows may be used temporarily before a competitively bid issuance of new long-term debt in order to allow for larger pooled issuances. These larger issuances create more liquidity which will attract a bigger, broader group of potential lenders and result in more optimal pricing and the ability to issue in all markets which achieves the least cost option for the Company and its customers.

Q. ARE THE FLOATING SHORT-TERM RATES UNDER LUCO'S CREDIT FACILITY THE FDC FOR THE $90 MILLION LONG-TERM PROMISSORY NOTE, AS MS. BOLIN IMPLIES?

A. No, the floating short-term rates do not represent the promissory note's FDC. Ms. Bolin's rebuttal testimony implies that LUCo has permanently financed the 4.53% 15-year long-term promissory note, issued by Liberty-Empire, with floating rate short-term debt for the next 15 years. I explain later in my testimony the reasons why it would not make financial sense for the Company to directly issue short-term debt; the same logic applies for debt raising at the LUCo level. The difference is that the Company has an immediate need for new long-term debt but LUCo does not, given its greater size, financial flexibility and its overall financing strategy. By definition, short-term debt is not the same good or service as long-term debt.

Q. HOW SHOULD THE FDC BE DETERMINED FOR THIS TYPE OF TRANSACTION?

A. The FDC for this transaction, which is to replace $90 million of maturing long-term debt with new long-term debt, should be the fair market terms obtained through LUCo's most recent $750 million competitively bid issuance of long-term notes through a private placement on March 24, 2017, which was used as the basis for pricing the promissory note. That private placement included the issuance of six notes (Series A – F) with tenors of three, five, seven, ten, twenty and thirty years covering the full spectrum of possible maturities and a weighted average tenor of 15 years. The interest rate on the promissory note, of 4.53%, was calculated by taking the average credit spread of the ten- and twenty-year notes from the LUCo financing and adding it to the fifteen-year treasury rate as of June 1, 2018. The FDC should be based on the actual goods or service required by the Company, which is long-term debt, priced as described, not short-term debt. I believe this is the optimal pricing mechanism for this transaction.

Q. IS LIBERTY-EMPIRE PAYING MORE THAN THE LESSER OF FDC OR FAIR MARKET VALUE FOR THIS LONG-TERM FINANCING TRANSACTION?

A. No. In this case, the fair market value and the FDC are the same for the $90 million promissory note, which is the 15-year long-term interest rate of 4.53%.

Q. IS LIBERTY-EMPIRE SUBSIDIZING LUCO?

A. No, it is not. As I explain later in my testimony, in my opinion, there were no superior, or more prudent options available to raise the $90 million for the maturing long-term bonds. LUCo did not and is not benefiting from the transaction. LUCo did not arrange to borrow money for itself on more favorable terms and require Liberty-Empire to borrow from it on less favorable terms to profit at the expense of the Company's customers. There is a very clear rationale behind the specific terms of the promissory note issued to LUCo and a very clear rationale as to how LUCo funds its subsidiaries, which includes Liberty-Empire. Maturing long-term bonds at the subsidiary level, which includes the Company, may not always be refinanced with a specific long-term debt issuance at the LUCo level on the day the bonds mature but if the subsidiaries require long term debt the terms of that debt will be based on a competitively bid issuance of LUCo long-term debt. By financing in this way, I do not see any subsidization between the Company and LUCo.

Q. WAS THERE ANY FAILURE OF THE COMPANY TO SOLICIT COMPETITIVE BIDS THAT COULD RESULT IN A FINANCIAL ADVANTAGE TO LUCO?

A. No. LUCo's financing approach is more strategic in nature and allows all of its subsidiaries to benefit from access to a larger pool of potential lenders. I have also explained the rationale behind the specific terms of the long-term promissory note that were offered to the Company and how these were the result of a highly competitive, liquid capital raising process. Liberty Utilities Finance GP1 was charged a fee of 50 basis points for the March 2017 $750 million oversubscribed private placement of notes, which it passed along to LUCo and ultimately the Company since the March 2017 notes formed the basis for the terms of the $90 million long-term promissory note issued by the Company.

Q. DOES THE COMPANY INTEND TO ENGAGE IN SIMILAR FINANCING TRANSACTIONS IN THE FUTURE?

A. Yes, that is my understanding.

Q. DOES THE COMPANY INTEND TO TAKE ANY ACTIONS IN LIGHT OF THE CONCERNS RAISED BY OPC AND STAFF IN THIS MATTER?

A. If desired by the Commission and the parties, it is my understanding that the Company would be willing to come before the Commission to seek a variance from the affiliate transactions rule for future, similar financing transactions. Although the subject transaction was not a violation of the Commission's affiliate transactions rule, the Company's filing for a variance would allow for more transparency and certainty.

IV. <u>PRUDENCE</u>

Q. DID LIBERTY-EMPIRE ACT IMPRUDENTLY WHEN IT REFINANCED ITS $90 MILLION FIRST MORTGAGE BONDS BY EXECUTING A PROMISSORY NOTE WITH LUCO THAT HAD A 4.53% INTEREST RATE, AS ALLEGED BY STAFF WITNESS MS. BOLIN?

A. No.

Q. PLEASE EXPLAIN.

A. The Company replaced a maturing $90 million issuance of first mortgage bonds with a $90 million 4.53% 15-year term promissory note. There was a need to replace maturing long-term debt with new long-term debt, and instead of issuing directly to investors itself, the Company issued its new long-term note to LUCo. As described above, the credit spread, and term of the new promissory notes were based on a March 24, 2017 competitively bid long term private placement of $750 million of notes issued on behalf of LUCo by Liberty Utilities Finance GP1. The base treasury rate used was based on June 1, 2018 treasury rates. As I will explain further in my testimony, in my opinion, there were no other superior long-term financing options available directly to the Company, and issuing short-term debt did not make financial sense. As I described earlier, Ms. Bolin is interpreting Standards Section (2)(A) of the Affiliate Transactions Rule to apply to a specific day in time for maturing long-term bonds which is not how LUCo manages its specific long-term financing needs. By alleging a violation of the Affiliate Transactions Rule, Ms. Bolin is implying that floating rate short-term debt is the same good or service as long-term debt which is what the Company requires. They are not the same.

Q. PLEASE EXPLAIN WHY YOU BELIEVE THAT ISSUING SHORT TERM DEBT TO REFINANCE THE MATURING $90 MILLION LONG-TERM BONDS WAS AN IMPRUDENT OPTION FOR THE COMPANY.

A. Refinancing $90 million of maturing long-term bonds with short-term debt, such as commercial paper, violates basic principles of financing which seek to match, to the greatest extent feasible, the term of borrowing with the expected life of the asset and its cash flow recovery. While it is most often the case that short-term borrowing such as commercial paper carries a lower interest rate than long-term borrowing, there are additional risks and costs associated with short-term borrowing, such as rollover risk and interest rate volatility, that make it imprudent to continuously issue short-term borrowing to fund assets whose cash flow recovery are long-term in nature. Put simply, the notion of borrowing short and lending long is not sound financial practice. The maturity matching principle is an important consideration for business liquidity, interest rate risk and minimizing floatation costs associated with continuously refinancing. In this case, the maturing long-term bonds were originally issued to finance long-term assets. The purpose of the promissory note issued by the Company, in the form of long-term (15 year) promissory notes, was to replace the Company's maturing long-term bonds. This promissory note achieved the objectives of balancing the Company's capital structure, reducing interest rate exposure and funding the long-term utility assets. Carrying significant additional short-term debt on the Company's balance sheet would not achieve these objectives and would not be in the interest of customers.

Q. WOULD LONG-TERM COLLATERALIZED NOTES ISSUED BY THE COMPANY WITHOUT A MAKE-WHOLE CALL OPTION BE A SUPERIOR FINANCING INSTRUMENT TO THE 4.53% PROMISSORY NOTE?

A. No, they would not. Make-whole call provisions are a market-standard term that lenders of long-term debt for utility financings require so that they can maintain a proper tenor matching of their assets and liabilities. The Company's outstanding first mortgage bonds all have make-whole provisions. The Company and LUCo carry the same long-term and short-term unsecured credit ratings. The rating agencies would assign a rating benefit to a collateralized bond versus an unsecured bond. In today's market, that rating benefit is small, in terms of credit spread. What then offsets this small benefit are the additional costs of issuing and servicing a supplemental mortgage indenture, plus legal, accounting and other costs to close the transaction. In addition, the Company's smaller size versus the larger and more diversified LUCo would further negate that benefit due to lenders' appetite for larger debt issuance sizes, which provide more liquidity for them. LUCo, and ultimately its subsidiaries, benefit greatly from its larger size, which allows it to access a wider pool of debt investors, across all markets. This was clearly demonstrated by the March 24, 2017 transaction in which Liberty Utilities Finance GP1, on behalf of LUCo, issued a $750 million private placement which received bids from 33 different institutional investors, totaling over $2.4 billion, or nearly three-times oversubscribed. LUCo has significantly greater access to capital in all markets and as a result, LUCo can raise capital on behalf of the Company in a more efficient and cost-effective manner.

Q. MR. COCHRANE, WAS THE 15 YEAR TERM AND THE 4.53% INTEREST RATE SELECTED FOR THE PROMISSORY NOTES A PRUDENT DECISION ON THE PART OF LIBERTY-EMPIRE?

A. Yes. As I explained earlier in my testimony, the basis for the terms of the $90 million promissory note was the March 24, 2017 $750 million private placement by Liberty Utilities Finance GP1 on behalf of LUCo. That private placement included the issuance of six notes (Series A – F) with tenors of three, five, seven, ten, twenty and thirty years covering the full spectrum of possible maturities. The weighted average life of the notes is 15 years. LUCo's $750 million financing was three times oversubscribed. The interest rate of 4.53% for the promissory note was calculated by taking the average credit spread of the ten- and twenty-year notes from the LUCo financing and adding it to the fifteen-year treasury rate as of June 1, 2018.

Q. MR. COCHRANE, WHAT HAS HAPPENED TO CREDIT SPREADS SINCE THE MARCH 2017 PRIVATE PLACEMENT BY LIBERTY UTILITIES FINANCE?

A. Credit spreads on investment grade corporate bonds widened between the period when LUCo originally issued the private placement (March of 2017), which underlies the terms of the Company's promissory note, and the period in which the $90 million first mortgage bonds matured (June of 2018). Therefore, the 4.53% interest rate on the promissory note was lower than a new issue interest rate would have been for a comparable 15-year term issued on the date the first mortgage bonds matured. I have prepared a chart that shows the credit spreads over time, which can be found in Surrebuttal Attachment JC-2.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

VERIFICATION OF JOHN COCHRANE

John Cochrane, under penalty of perjury, declares that the foregoing surrebuttal testimony is true and correct to the best of her/his knowledge, information, and belief.

/s/ *John Cochrane*
John Cochrane

John Cochrane

Senior Managing Director

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Education

M.B.A., Northeastern University

B.A. Biology, Harvard University

Mr. Cochrane is a Senior Managing Director in FTI's Power & Utilities practice within the Economic and Financial Consulting segment, specializing in advising electric and gas utility clients in all economic, regulatory and financial areas of their business. He has more than 30 years of US and international utility sector experience, including over 20 years of experience testifying on financial issues for electric utility rate cases including capital structure and ROE in New Hampshire, Massachusetts, Rhode Island, New York and before FERC. In addition, he has extensive experience in mergers and acquisitions, joint ventures, partnerships, restructurings, regulation and business development, both domestic and international. He has held C-suite and other senior leadership positions at major US utilities and served as a member of the Board of Directors on a variety of energy sector companies including start-ups.

PROFESSIONAL EXPERIENCE

***FTI Consulting*, Senior Managing Director, Boston, MA, 2013 to present**, with responsibility for leading the Economic and Financial Consulting Power & Utilities team based in Boston:

- Provided cost of capital testimony supporting Liberty Utilities' (Granite State Electric) ongoing rate case before the New Hampshire Public Utilities Commission, including analysis of return on equity and capital structure.
- Advised Trans Bay Cable, an underwater direct current transmission cable connecting San Francisco to Pittsburg (CA), on the reasonableness and methodology of its ROE calculation for the 3-year rate case reset before FERC; provided analysis and expert advice for testimony development.
- Provided expert testimony pertaining to a purchase price dispute stemming from CCI's acquisition of a portfolio of power plants located in PJM.
- Advised PPL Electric Utilities on financial modeling and rate case strategy on the development of transmission projects in PJM.
- Advised global infrastructure fund on financial modeling and rate case strategy applying to a wholly-owned portfolio company, a water utility covering three separate jurisdictions in the U.S. southwest.

***National Grid PLC,* Executive Vice President** – Global Business Development & Mergers and Acquisitions (most recently, among other senior roles), US/UK/Europe 2006-2013

- Assisted in the development of the Cap & Floor regime for regulatory return on capital for transmission interconnectors in Great Britain.
- Led all business development, mergers, acquisitions, divestitures and joint ventures globally, including the sale of a wide range of businesses totaling $10B, the negotiation of a 15 year, $4.5B power supply agreement with Long Island Power Authority, and commercial and regulatory negotiations for a $3B joint venture with six New York transmission owners.
- Led joint venture negotiations, feasibility studies, project budgets and timelines, and vendor selections for four £1B sub-sea interconnectors between the United Kingdom, Norway, Belgium, France and the Netherlands.

***National Grid USA*, 1999 – 2006 Executive Vice President, Chief Financial Officer and Treasurer**

- Testified on behalf of National Grid with respect to capital structure in rate cases, in all National Grid state jurisdictions, including New Hampshire, Massachusetts, Rhode Island, New York and before FERC.
- Testified as a witness with respect to ROE for a rate case in New Hampshire on behalf of Granite State.
- Testified on behalf of National Grid with respect to debt and equity financings including first mortgage bonds, bank agreements, private placements, common equity issuances in all National Grid state jurisdictions, including New Hampshire, Massachusetts, Rhode Island, New York and before FERC.
- Managed ROE expert testimony preparation on behalf of National Grid in all National Grid state jurisdictions, including New Hampshire, Massachusetts, Rhode Island, New York and before FERC.
- Managed the preparation of FERC ROE filing for two DC transmission lines from Canada in New Hampshire and Massachusetts.
- Supported regulatory approval filings for several M&A deals completed by National Grid including: the sale of New England Electric to National Grid, the purchase of Eastern Utilities by National Grid, the purchase of Niagara Mohawk by National Grid, the purchase of KeySpan Corp by National Grid, The purchase of Rhode Island gas assets of Southern Union Co by National Grid, helping to create the second largest US utility with a total enterprise value of $27B.
- Ran the sale process on behalf of National Grid for Granite State and EnergyNorth, purchased by Liberty Utilities.
- In addition to mergers & acquisitions, he was responsible for accounting, tax, pensions, insurance/claims, risk management, energy supply, property, investments, cash management, forecasting/budgeting, planning, financial analysis and all third-party financing. In this capacity, he managed a 500-person organization with 13 reporting functions.
- Served as a U.S. board member on US/European companies involved in cross-

border tax structures including Luxemburg, Ireland, Jersey, Iceland and Malta.

***New England Electric Systems*, Treasurer** (most recently, among other senior roles), Westborough, MA, 1981-1999

BOARD OF DIRECTORS MEMBERSHIP

EMERA US Subsidiaries, Member, Board of Directors, 2015 – present

*PowerOption*s, Board of Directors (Audit and Strategic Planning Committees), 2013 – present

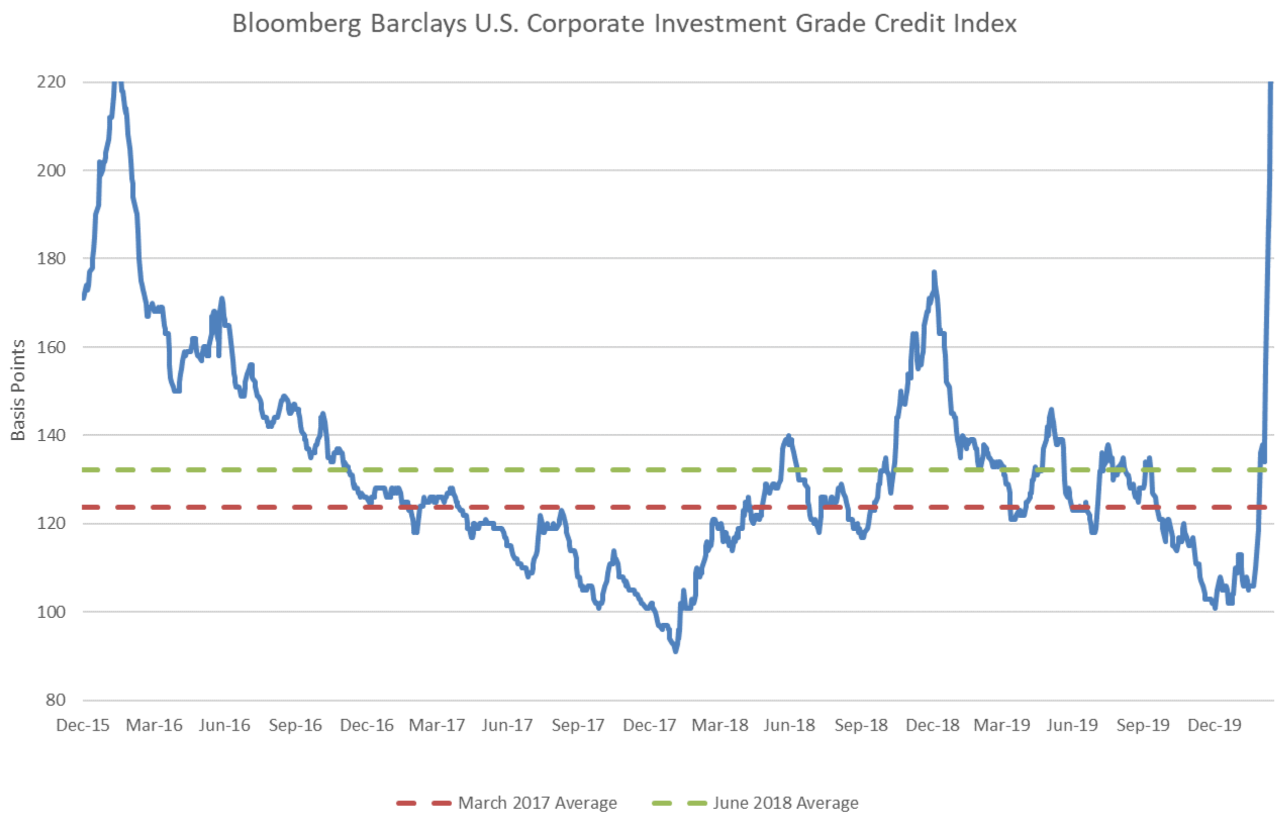
GreenerU, Inc., Member, Board of Directors, 2011 – 2013

National Grid USA, Member, Board of Directors, 2000 – 2013

SELECT TESTIMONY

Sponsor	Date	Applicant(s)	Docket/Case	Subject
		New Hampshire Public Utilities Commission		
National Grid USA	08/2006	National Grid USA; EnergyNorth Natural Gas	DG 06-107	Merger
Granite State Electric Company	11/1992	Granite State Electric Company	DF 92-219	Financing
Granite State Electric Company	4/2019	Granite State Electric Company	DG 19-064	Cost of Capital
		Massachusetts Department of Public Utilities		
New England Electric System	05/1995	New England Electric System; Nantucket Electric Company	DPU 95-67	Merger
New England Power Company	10/1997	USGen New England, Inc; New England Power Company; Massachusetts Electric Company; Nantucket Electric Company	DPU 97-94	Financing
		New York Department of Public Service		
National Grid plc	10/2006	National Grid plc; KeySpan Corporation	PSC Case 06-M-0878	Merger
		Federal Energy Regulatory Commission		
New England Power Company; Massachusetts Electric Company; The Narragansett Electric	09/1997	New England Power Company; Massachusetts Electric Company; The Narragansett Electric	OA96-74-000	Capital Structure and Cost of Capital

Company; Granite State Electric Company		Company; Granite State Electric Company		
New England Power Company	01/1997	New England Power Company	ER-97-1115	Financing
NEES Transmission Services, Inc.; New England Power Company; Massachusetts Electric Company; The Narragansett Electric Company; Granite State Electric Company	03/1996	NEES Transmission Services, Inc.; New England Power Company; Massachusetts Electric Company; The Narragansett Electric Company; Granite State Electric Company	ER96-1309-000	Capital Structure and Cost of Capital
New England Power Company	09/1995	Tennessee Gas Pipeline Co	RP95-112-000	Return on Equity
New England Power Company	12/1994	New England Power Company	Docket ER95-267	Capital Structure and Cost of Capital


Bloomberg Barclays U.S. Corporate Investment Grade Credit Index
Basis Points
220
200
180
160
140
120
100
80
Dec-15
Mar-16
Jun-16
Sep-16
Dec-16
Mar-17
Jun-17
Sep-17
Dec-17
Mar-18
Jun-18
Sep-18
Dec-18
Mar-19
Jun-19
Sep-19
Dec-19
March 2017 Average
June 2018 Average